APPLICATION 09/825,619
PROPOSED AMENDMENTS TO CLAIMS 19-29

19. (currently amended) A distributed method for routing material from a source to a destination in a material transport system including track zones and directors connecting the track zones, wherein the directors include routing tables that store routing information for a plurality of routes across the material transport system to a destination, the method comprising:

launching the material from the source;

if the material enters a track neighborhood that includes a director through which the material must pass to proceed to the destination, notifying the director;

the director, in response to the notifying, selecting an optimal route for the material based on the destination and stored routing information indicating for each material transport system destination a director exit angle and a metric characterizing quality of a path to the destination originating from the director exit angle; ~~and~~

the director subsequently decelerating the material, rotating to the director exit angle associated with the optimal route and relaunching the material along the optimal route; and

~~wherein~~ automatically generating or modifying said stored routing information ~~is automatically generated or modified~~ to accommodate ~~changes~~ the addition of a new director or a new destination to the material transport system.

20. (canceled)

21. (canceled)

22. (currently amended) The distributed method of claim 19, wherein said step of automatically generating or modifying comprises automatically generating said ~~the~~ stored routing information ~~is automatically generated~~ for a new director as follows:

(1) the new director sends a path query including a metric to an immediate downstream neighbor at the particular exit angle;

(2) in response to the path query:

(2a) when the immediate downstream neighbor is the destination: the destination increments the metric to indicate the quality of the route to the destination and returns the incremented metric to the new director;

(2b) when the immediate downstream neighbor is a track zone: the track zone increments the metric to indicate the quality of the route through the track zone to the destination, resends the path query with the incremented metric to an immediate downstream neighbor of the track zone, which repeats operation (2) recursively; and

(2c) when the immediate downstream neighbor is another director: the other director increments the metric to indicate quality of the route from the other director to the destination and returns the incremented metric to the new director.

23. (original) The distributed method of claim 19, wherein the metric is a function of at least one of:

route length;

route transit time; and

route congestion.

24. (currently amended) The distributed method of claim 19, wherein said step of automatically generating or modifying comprises automatically modifying said ~~the~~ stored routing information ~~is automatically modified to account~~ for a new destination being added to the material transfer system as follows,

(1) the new destination announces its presence to its immediate upstream neighbor using an announce message including a metric;

(2) in response to the announce message:

(2a) when the immediate upstream neighbor is a track zone, the track zone increments the metric and resends the announce message with the updated metric to an immediate upstream neighbor of the track zone, which repeats operation (2) recursively;

(2b) when the immediate upstream neighbor is a first director: the first director increments the metric stores the metric along with the exit angle and identity of the new destination and returns a registered message informing the new destination that it has been registered.

25. (original) The distributed method of claim 24, further comprising, when the immediate upstream neighbor is the first director:

the first director announces the new destination to adjacent directors with route announce messages indicating a cumulative metric representing the metric from the first director to the new destination and the metric between the first director and respective ones of the adjacent directors;

repeating an operation wherein each of the adjacent directors updates their stored information for an appropriate exit angle with the cumulative metric and resends the route announce message to their adjacent directors until the route announce message arrives back at the first director.

26. (original) The distributed method of claim 19, wherein the stored information for each of the routes comprises:

the destination;

the exit direction;

whether the route is direct, meaning there are no intervening directors, or via, meaning there is at least one intervening director;

the metric characterizing goodness of the route; and

the route status.

27. (original) The distributed method of claim 19, further comprising:

when the material comprises two or more material units moving in one neighborhood in need of routing through the director, the track zones cooperatively route the material units to the director so there is no possibility of a collision between the material units and the material units continue to move forward at optimal speeds.

28. (original) The distributed method of claim 19, wherein the track zones are unidirectional, further comprising:

configuring the transport system for bidirectional movement within one neighborhood by:

arranging a subset of the directors in a director cluster of two or more directors;

enabling exit angles for each of the directors in the director cluster to permit the material moving in one direction on a first unidirectional track zone segment in the neighborhood to be turned using two or more of the directors in the director cluster onto a second unidirectional track zone segment for movement in another direction in the neighborhood.

29. (original) The distributed method of claim 28, wherein the director cluster comprises a number of directors selected to prevent deadlock conditions where one or more material units needing to move through the director cluster are prevented from moving due to each others presence in vicinity of the director cluster.